

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

1-41 (Canceled)

42. (Currently Amended) An isolated or purified nucleic acid sequence encoding a polypeptide comprising the amino acid sequence of SEQ ID NO:8, wherein said nucleic acid sequence is obtained by genetic engineering and designed by selecting at least a portion of the codons of said nucleic acid sequence from codons preferred for expression in a host cell.

43. (Previously Presented) The nucleic acid of claim 42, wherein said nucleic acid comprises nucleotides 10-1332 of SEQ ID NO:7.

44. (Canceled)

45. (Previously Presented) The nucleic acid of claim 42, further comprising an expression control sequence operably linked to said nucleotide sequence.

46. (Previously Presented) The nucleic acid of claim 45, wherein said expression control sequence comprises a promoter.

47. (Previously Presented) The nucleic acid of claim 45, wherein said expression control sequence comprises an enhancer.

48. (Currently Amended) A method of preparing a polypeptide comprising a carboxy-terminal portion of the heavy chain of botulinum neurotoxin serotype B, comprising:

transfecting a cell with a nucleic acid sequence encoding a polypeptide comprising the amino acid sequence of SEQ ID NO:8, wherein said nucleic acid sequence is obtained by genetic engineering and designed by selecting at least a portion of the codons of said nucleic acid sequence from codons preferred for expression in a host cell; and

culturing the transfected cell under conditions wherein the nucleic acid is expressed and ~~said carboxy-terminal portion of the heavy chain of botulinum neurotoxin serotype B~~ the polypeptide comprising the amino acid sequence of SEQ ID NO:8 is produced,

wherein the cell is selected from the group consisting of a gram negative ~~bacteria~~bacterium, a yeast cell, and cell of a mammalian cell line.

49. (Previously Presented) The method of claim 48, further comprising recovering from said transfected cell at least one insoluble polypeptide comprising the amino acid sequence of SEQ ID NO:8.

50. (Previously Presented) The method of claim 48, wherein said cell is *Escherichia coli*.

51. (Previously Presented) The method of claim 48, wherein said cell is *Pichia pastoris*.

52. (Canceled)

53. (Currently Amended) A method of isolating an immunogenic polypeptide

comprising the amino acid sequence of SEQ ID NO:8, comprising:

culturing a cell transfected with an expression vector comprising a nucleic

acid sequence encoding a polypeptide comprising the amino acid sequence

of SEQ ID NO:8, wherein said nucleic acid sequence is obtained by

genetic engineering and designed by selecting at least a portion of the

codons of said nucleic acid sequence from codons preferred for expression

in a host cell, under conditions wherein the nucleic acid sequence is

expressed; and

isolating from said transfected cell at least one insoluble polypeptide

comprising the amino acid sequence of SEQ ID NO:8,

wherein the cell is selected from the group consisting of a gram negative ~~bacteria~~

bacterium, a yeast cell, and cell of a mammalian cell line and wherein the isolated

polypeptide is immunogenic.

54. (Canceled)

55. (Previously Presented) The nucleic acid of claim 42, wherein the AT content is less

than about 70% of the total base composition.

56. (Previously Presented) The nucleic acid of claim 55, wherein the AT content is less

than about 60% of the total base composition.

57-81. (Canceled)

82. (Currently Amended) A ~~recombinant~~ host cell comprising the nucleic acid of claim 45, wherein said nucleic acid is expressed.

83-84. (Canceled)

85. (Previously Presented) The recombinant host cell of claim 82, wherein said nucleic acid is expressed as a polypeptide, and wherein said polypeptide is at least 0.75% (w/w) of the total cellular protein.

86. (Previously Presented) The recombinant host cell of claim 85, wherein said polypeptide is at least 20% (w/w) of the total cellular protein.

87. (New) An isolated nucleic acid comprising nucleotides 10-1332 of SEQ ID NO:7.

88. (New) The nucleic acid of claim 87, wherein said nucleic acid comprises SEQ ID NO:7.